

# Claims

- [c1] A track locking method for an optical disk drive, comprising the steps of:  
generating a tracking servo output signal for driving an optical pick-up head to arrive at a target track;  
determining an instantaneous level of the tracking servo output signal at the moment that the optical pick-up head was shifting to an adjoining off-track interval from an on-track interval of the target track; and  
holding the tracking servo output signal at the instantaneous level till the optical pick-up head moves to the on-track interval of the target track.
- [c2] The track locking method for an optical disk drive of Claim 1, further comprising the steps of:  
temporarily switching the optical pick-up head to an adjoining on-track interval after the optical pick-up head goes through half an off-track interval adjoining to the on-track interval of the target track; and  
switching the optical pick-up head back to the target track by means of a short-seeking motion.
- [c3] A track locking method for an optical disk drive, comprising the steps of:

generating a tracking servo output signal for driving an optical pick-up head to arrive at a target track;  
determining an instantaneous level of the tracking servo output signal at the moment that the optical pick-up head was shifting to an adjoining off-track interval from an on-track interval of the target track; and  
intermittently holding the tracking servo output signal at the instantaneous level by using pulse width modulation method till the optical pick-up head moves to the on-track interval of the target track.

[c4] The track locking method for an optical disk drive of Claim 3, further comprising the step of:  
temporarily switching the optical pick-up head to an adjoining on-track interval after the optical pick-up head goes through half an off-track interval adjoining to the on-track interval of the target track; and  
switching the optical pick-up head back to the target track by means of a short-seeking motion.

[c5] A track locking apparatus for an optical disk drive, comprising:  
a controller for generating a tracking servo output signal;  
a signal-holding unit capable of determining and holding a level of the tracking servo output signal; and  
a switch for switching the tracking servo output signal to

the signal-holding unit after an optical pick-up head of the optical disk drive arrives at an adjoining off-track interval from an on-track interval of a target track.

- [c6] The track locking apparatus for an optical disk drive of Claim 5, wherein the signal-holding unit further includes a pulse width modulation circuit for outputting an intermittent signal.
- [c7] The track locking apparatus for an optical disk drive of Claim 5, wherein the signal-holding unit is embedded in the controller.
- [c8] The track locking apparatus for an optical disk drive of Claim 5, wherein the switch directly passes a driver the tracking servo output signal when the optical pick-up head dwells in the on-track interval of the target track.
- [c9] The track locking apparatus for an optical disk drive of Claim 5, wherein the switch is controlled by the controller.
- [c10] The track locking apparatus for an optical disk drive of Claim 5, wherein the switch is embedded in the controller.